

## Lesson 4-8

## Comparing and Ordering Fractions

### Lesson Objective

To compare and order fractions

NAEP 2005 Strand: Number Properties and Operations

Topic: Number Sense

Local Standards: \_\_\_\_\_

### Vocabulary

The **Least Common Denominator (LCD)** of two or more fractions is \_\_\_\_\_

### Example 1- Comparing Fractions

Compare  $\frac{5}{8}$  and  $\frac{7}{10}$ . Use  $<$ ,  $=$ , or  $>$

**Step 1-** Find the LCD (it is the same as the LCM between \_\_\_\_ and \_\_\_\_)

LCD = \_\_\_\_\_

**Step 2-** Convert each fraction to an equivalent fraction with the same denominator.

**Step 3-** Compare.

\_\_\_\_\_. So, \_\_\_\_\_

## Example 2- Comparing Mixed numbers

If you need a piece of lumber that is  $4\frac{3}{16}$  feet long, is a  $4\frac{1}{4}$  foot piece long enough?  
(Since the whole number is the same, compare the fractions using the same steps from Example 1)

**Step 1-** Find the LCD (it is the same as the LCM between \_\_\_\_ and \_\_\_\_)

LCD = \_\_\_\_

**Step 2-** Convert each fraction to an equivalent fraction with the same denominator.

**Step 3-** Compare.

\_\_\_\_. So, \_\_\_\_

The  $4\frac{1}{4}$  piece of wood \_\_\_\_\_ long enough.

### Example

- 3 **Ordering Fractions and Mixed Numbers** Order  $1\frac{3}{4}$ ,  $\frac{7}{10}$ ,  $1\frac{11}{12}$ , and  $\frac{5}{8}$  from least to greatest.

**Step 1** Order the fractions. Find the LCM of 10 and 8. The LCD of the fractions is .

$$\frac{7}{10} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} \quad \frac{5}{8} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} \quad \leftarrow \text{Write equivalent fractions.}$$

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} < \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}. \text{ So the order of the fractions is } \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} < \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}.$$

**Step 2** Order the mixed numbers. Since the whole number parts are the same, compare  $\frac{3}{4}$  and  $\frac{11}{12}$ .

$$\frac{3}{4} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}, \text{ so } \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} < \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}.$$

$$\text{The order of the mixed numbers is } 1\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} < 1\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}.$$

Including the fractions first, the order is

$$\boxed{\phantom{00}} < \boxed{\phantom{00}} < \boxed{\phantom{00}} < \boxed{\phantom{00}}.$$

### Quick Check

3. Order  $2\frac{5}{6}$ ,  $\frac{3}{8}$ ,  $1\frac{1}{3}$ ,  $2\frac{4}{5}$ , and  $1\frac{2}{3}$  from least to greatest.

**Practice 4-8****Comparing and Ordering Fractions**Compare each pair of numbers using  $<$ ,  $=$ , or  $>$ .

1.  $2\frac{14}{17}$    $1\frac{16}{17}$

2.  $2\frac{15}{21}$    $5\frac{5}{7}$

3.  $2\frac{7}{8}$    $2\frac{5}{6}$

4.  $3\frac{15}{16}$    $3\frac{21}{32}$

5.  $4\frac{7}{8}$    $3\frac{9}{10}$

6.  $5\frac{9}{10}$    $5\frac{18}{20}$

Order each set of numbers from least to greatest.

7.  $\frac{9}{10}, \frac{5}{6}, \frac{14}{15}$   
\_\_\_\_\_

8.  $\frac{7}{8}, 1\frac{7}{12}, 1\frac{5}{6}$   
\_\_\_\_\_

9.  $\frac{14}{15}, \frac{9}{10}, \frac{11}{12}$   
\_\_\_\_\_

10.  $2\frac{1}{4}, 3\frac{7}{8}, 3\frac{5}{6}$   
\_\_\_\_\_

11.  $\frac{2}{3}, \frac{4}{5}, \frac{7}{30}, \frac{11}{15}$   
\_\_\_\_\_

12.  $2\frac{1}{6}, 1\frac{3}{4}, 3\frac{7}{8}, 2\frac{1}{10}$   
\_\_\_\_\_

Use mental math to compare each pair of fractions using  $<$ ,  $=$ , or  $>$ .

13.  $\frac{1}{6}$    $\frac{1}{8}$

14.  $\frac{8}{9}$    $\frac{8}{12}$

15.  $\frac{1}{4}$    $\frac{1}{5}$

16.  $\frac{3}{9}$    $\frac{3}{7}$

17.  $\frac{5}{50}$    $\frac{1}{60}$

18.  $\frac{9}{10}$    $\frac{10}{12}$

19.  $\frac{1}{12}$    $\frac{1}{15}$

20.  $\frac{5}{6}$    $\frac{3}{4}$

21.  $\frac{1}{65}$    $\frac{3}{60}$

22. Four puppies measured
- $5\frac{1}{4}$
- in.,
- $5\frac{3}{8}$
- in.,
- $5\frac{5}{8}$
- in., and
- $5\frac{5}{16}$
- in. long at birth. Put the lengths in order from least to greatest.
- 
- \_\_\_\_\_

2

3

4

5

6

8

10

11